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**The Interplay Between Goal Framing and Message Framing in
Advocating Sunscreen Use**

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Abstract

The Interplay Between Goal Framing and Message Framing in Advocating Sunscreen Use

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Goal framing and message framing have been widely studied in separate disciplines where both demonstrating theoretical and practical implications in developmental education, psychological factors, marketing, and health contexts. This work uses Self-Determination Theory and Regulatory Focus Theory, to investigate the interplay between goal framing (i.g., intrinsic versus extrinsic) and regulatory focus message framing (i.g., promotion versus prevention) in a health communication context. The study reveals a significant interactive effect between the match of intrinsic goal frame and prevention regulatory focus message frame in terms of attitude toward message. Further, the pairing of an extrinsic goal frame with a promotion regulatory focus message frame resulted in significantly higher intention to engage in healthy behavior. Therefore, this work contributes to the goal, motivation, and persuasion literature streams. This work also offers practical implications for health communication practitioners and social marketers.

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Chapter 1: Introduction

Skin cancer is the most prevalent cancer diagnosed in the United States (U.S. Cancer Statistics Working Group, 2017). It is estimated that 5.4 million basal cell and squamous cell skin cancers are diagnosed each year in 3.3 million Americans (individuals can have more than one type of skin cancer) (American Cancer Society, 2017). Interestingly, skin cancer can oftentimes be prevented through the regular use of sunscreen. Sunscreen does more than preventing skin cancer and sunburn. A recent study from Australian researchers have found that sunscreen can effectively protect against aging including dark spots, skin elasticity, and wrinkles (Hughes, Williams, Baker, & Green, 2013). Thus, consumers may have various motivations for regularly using sunscreen. Given the important and divergent benefits of using sunscreen, it is important to understand what types of message appeals and persuasive strategies will be more effective encouraging people to use sunscreen on a regular basis.

Public Service Announcements (PSAs) often apply message framing strategies to produce desired persuasion effects, which has been the focus of a dearth of research (Cheng, Woon, & Lynes, 2011; Jung & Villegas, 2011). For example, a wide body of research has utilized the regulatory focus framework to examine the interaction of gain versus loss frames with prevention versus promotion message frames, finding the compatible message elements result in more favorable outcomes (Aaker & Lee, 2001; Salovey, Schneider, & Apanovitch, 2002; Lee & Aaker, 2004). The notion of regulatory fit describes this compatibility effect where message persuasiveness increases when the end state (i.e., gain versus loss frame) is compatible rather than incompatible with regulatory focus (i.e., promotion versus prevention focus) (Lee & Aaker, 2004). Specifically, higher fit of the

message leads to better processing fluency (i.e., the ease of processing) which in turn induces more favorable attitude toward the ad when a gain frame (loss frame) is paired with a promotion-focus (prevention- focus) message frame and low perceived risk (high perceived risk) (Lee & Aaker, 2014).

Regulatory focus has been examined together with other factors such as self-construal (i.e., independent versus interdependent) and temporal frame (i.e., proximal versus distant) to test the persuasiveness of PSAs (Pounders, Lee, & Mackert, 2015). It was found that the combination of an independent self-construal and a distal frame is more pronounced in a gain frame (i.e., promotion-focus), whereas the match between an interdependent self-construal and a proximal frame is more salient in a loss frame (i.e., prevention focus) (Pounders, Lee, & Mackert, 2015). Independent self-construal is also suggested to be more effective when pairing with a promotion-focus (Aaker & Lee, 2001).

Interestingly, motivation frames, or goal frames, are commonly utilized in PSAs, but have rarely been studied. Goal framing in this context refers to the type of goal being conveyed in the PSA: intrinsic or extrinsic (Lee, 2016). For example, exercising to improve health is an intrinsic goal, which refers to engaging in behaviors where the motivation source come from within the self (Lee, 2016). An extrinsic goal refers to the source of motivation is external. Compared to the example provided above, exercising to improve one's physical appearance is an example of an extrinsic goal, for the purpose of impressing others. The majority of previous work investigating intrinsic and extrinsic goal framing has been primarily conducted in educational contexts. Studies conducted in the educational setting have demonstrated that intrinsic goal framing is more effective in producing achievement outcomes such as personal growth and community contributions in addition to greater satisfaction of psychological needs (Vansteenkiste, Simons, Lens, Sheldon &

Deci, 2004). Recently, Lee (2006) examined the interplay between intrinsic and extrinsic goal framing and one's accessible self-construal (independent versus interdependent) in the context of persuasion. Specifically, this work found that when an independent self-construal is accessible (focus on the self), an intrinsic goal frame significantly increases consumers' attitude towards the ad and message, as well as persuasiveness and behavioral intention. However, when an interdependent self-construal (focus on family) is accessible these effects diminished (Lee, 2016).

Thus, although research has begun to examine goal framing in persuasion, there is still a need to better understand how goal frames function in persuasion. Prior research suggests that regulatory focus may interact with goal frame. Specifically, Idson, Liberman and Higgins's (2000) research investigated emotional experience and motivation by conceptualizing gain as promotion success; non-gain as promotion failure, loss as prevention failure and non-loss as prevention success. In other words, higher motivational intensity is demonstrated under regulatory fit conditions, yet the motivational source and content were not acknowledged (Lee & Aaker, 2004). Maheswaran and Meyer-Levy's study suggested that certain amount of motivation is required for framing effect to take place (Smith & Petty, 1996). Thus, there is reason to believe that motivation in the form of intrinsic versus extrinsic goal framing may influence the effectiveness of regulatory focus message framing. Thus, this study aims to determine the compatibility effect of the match among promotion and prevention framed messages that emphasizes an intrinsic or extrinsic goal.

The purpose of this study is to identify how consumer response to a public service announcement (PSA) campaign varies depending on the interplay between motivational goal framing and regulatory-focus goal framing in the context of sunscreen use.

Specifically, this work examines the promotion-focused versus prevention-focused message frames in PSAs in relation to intrinsic versus extrinsic goals. This study applies self-determination theory and regulatory focus theory to identify favorable messaging strategies to promote healthier habit of sunscreen use. It is hypothesized that the match between an extrinsic goal frame with a promotion-focus message frame and intrinsic goal with a prevention-focus message frame will lead to a more positive attitude toward the message and higher intention to perform the advocated behavior of using sunscreen on a regular basis.

Chapter 2: Literature Review

Theoretical Background

Motivation is the driving force when an individual is activated and energized to pursue a goal. On the contrary, a person who is lacking impetus or inspiration to act is considered unmotivated (Ryan & Deci, 2000a). Motivation has been studied widely in the domain of natural versus rational. Natural theories such as McGregor's Theory Y, individual behavior is based on the satisfaction of a hierarchy of needs (McGregor, 1960). In contrast, rational theories propose that people prefer reasoning, routine, and security over creativity which only react to rewards and punishments (Frank, 2012). Motivation content versus process have also been discussed to understand the factors that motivates individuals to engage in an activity as well as attitude and behavioral change. For example, Maslow's Hierarchy of Needs maintains that a person's motivation for a higher need only occurs when current level has been satisfied (Maslow, 1943). Vroom's Expectancy Theory explains the process an individual undergoes in making decisions (Vroom, 1964). From the psychological perspective, motivation concerns activation and intention that involves a combination of energy, direction, persistence, and equifinality that is significant to various aspects inducing the act (Ryan & Deci, 2000b). Despite that the early research examined motivation as a unitary form, current research suggests that people are motivated intrinsically, which refers to engaging in an activity for its inherent satisfaction, or motivated by external incentives and coercion from varied life experiences.

Related to motivation is the theory of regulatory focus, which posits that people can have one of two goal orientations: promotion-focus or prevention-focus. Specifically,

individuals with a promotion-focus goal orientation seek to attain positive outcomes, whereas individuals with a prevention-focus goal orientation seek to avoid negative outcomes (Higgins, 1997). Although regulatory focus was originally examined as a chronic trait, it has been applied in persuasion by using the ad copy to prompt an individual to have a more accessible promotion or prevention-focus (Aaker & Lee, 2001; Pounders, Lee & Mackert, 2015).

Drawing from Self-Determination Theory and Regulatory Focus Theory, this thesis reviews the literature on intrinsic and extrinsic motivation and associated goal framing, as well as promotion-focus and prevention-focus message framing.

Self-Determination Theory

Motivation theories in early literature such as drive theory only considered motivation a unitary concept varying in amount and strength, with the only distinction between the notion of amotivation and motivation (Bandura, 1986). Self-Determination Theory (SDT; Deci & Ryan, 1985) was developed as a more comprehensive approach to distinguish the orientation (i.e., types of motivation) and consequences as opposed to the singular form of motivation. SDT explains the innate psychological need of human motivation and personality as inherent growth tendencies functioning within the social-contextual conditions. The orientation is also considered an indicator of the quality of motivation that contribute to one's personality integration and self-regulation (Vansteenkiste, Lens & Deci, 2006). Specifically, this theory initially examined the dichotomy of intrinsic and extrinsic motivation as they are found to be correlated with different goals in activities and contexts that function differently. According to SDT, the fundamental distinction between intrinsic and extrinsic motivation is that intrinsic

motivation refers to initiating the action from the enjoyment and satisfaction of the activity itself, whereas extrinsic motivation results from attaining a separable outcome of the instrumental value (e.g., rewards and avoidance of punishment).

Intrinsic motivation

Intrinsic motivation is the natural tendency to engage in an activity for the inherent interest and satisfaction associated with cognitive and social development (Ryan & Deci, 2000a). Because intrinsic motivation derives from the nexus between the person and the task, some definitions characterized the task being interesting while others attempted to define intrinsic motivation in terms of the psychological gains from the engagement (Ryan & Deci, 2000a). Operant theory developed by Skinner (1953) argued that all behaviors are motivated by rewards, where the benefit of the activity itself is the reward for intrinsic motivation. In contrast, Hull (1943) maintained that all behaviors are driven by psychological needs, where intrinsically motivated activities meet the satisfaction of innate psychological needs (Ryan & Deci, 2000a). SDT integrates both perspectives while focusing the latter approach in which competence, autonomy and relatedness influence (i.e., facilitates or undermine) the propensity to act.

The characteristics of intrinsic motivation was first identified on animal behaviors, where multiple organisms engage in exploratory and spontaneous behaviors without the presence of rewards or reinforcement (White, 1959). This innate need to learn is adaptive to the benefit of organisms which is critical on human cognitive, social and physical development as well (Ryan & Deci, 2000a). Self-discovery and the creative skills fostered from childhood can significantly impact decision making and performances in their adulthood (Ryan & Deci, 2000a).

In the psychology literature stream, intrinsic motivation is seen as superior to external motivation in terms of favorable goal outcomes associated with greater well-being and health. It is critical to the cognitive, psychological and social development as it actively and volitionally act on the tendency of self-exploration. Ryan and Deci (2000a) also noted that although intrinsic motivation in SDT is considered an “inherent organismic propensity”, it is facilitated or catalyzed rather than caused. Interestingly, researchers have conducted several studies to examine the impact of external rewards on intrinsic motivation (e.g., Deci, 1971, 1972; Kruglanski, Freedman, & Zeevi, 1971; Lepper, Greene, & Nisbett, 1973; Deci, Koestner, & Ryan, 1999). An early study found that when participants receive money as external reward doing an activity, the persistence and intrinsic motivation decrease relative to non-rewarded group, measured by duration of time one spent on that activity (Deci, 1971). On the other hand, when participants receive verbal reinforcement of positive feedback as external reward, their intrinsic motivation and persistence increase compared to non-rewarded participants (Deci, 1971). Additional experiments examining other external factors such as deadlines (Amabile, DeJong, & Lepper, 1976), surveillance (Enzle & Anderson, 1993) and controlling languages (Vansteenkiste et al., 2004) all undermined participant’s intrinsic motivation that negatively affect the nature of proactive self-growth.

Intrinsic motivation has been frequently applied in education practices to determine factors that facilitate or undermine students’ learning process and achievements (Ryan & Deci, 2000a). According to Ryan and Deci (2000a), there are two approaches that are often used to measure intrinsic motivation. One is “free choice” approach where the participants in an experimental setting with distractions from the task to be tested. When individuals choose to continue working on a targeted task in the absence of extrinsic outcomes such as

rewards or punishment, it suggests that it is intrinsically interesting to invest more time on the task at hand. Hence, the participants are considered more intrinsically motivated for the task (Ryan & Deci, 2000a). Deci's (1971) experiment mentioned above employed the free choice approach. The second approach is self-report of the interest of an activity on a scale in response to a specific task (e.g. Ryan, 1982; Harackiewicz, 1979). For example, participants may be asked to rate on scales such as pretest enjoyment, experimental enjoyment, posttest enjoyment, performance and recall (Harackiewicz, 1979). This task-focused approach is efficient and accurate in self-evaluation, however, may have predetermined higher task involvement and lower distraction from natural learning environment (Ames, 1984; Dweck, 1986).

The subtheory of SDT, Cognitive Evaluation Theory (CET; Ryan & Deci, 1985) specifies the social and environmental factors that facilitates or undermines intrinsic motivation by focusing on the fundamental needs for competence and autonomy. This theory argues that the feeling of competence can be supported from a variety of interpersonal events and structures such as rewards, challenges, and other acknowledgements. Meanwhile, studies have shown (Fisher, 1978; Ryan, 1982) that intrinsic motivation is only enhanced when competence is accompanied by autonomy (Ryan & Deci, 2000a). In attributional term, a sense of autonomy is called *internal perceived locus of causality* (IPLOC) on the spectrum from impersonal, external, to internal (deCharms, 1968). Imposed goals, deadlines and punishments diminish intrinsic motivation as they conduce towards external perceived locus of causality (Ryan & Deci, 2000). In educational practices, researchers have found that teachers using autonomy supportive approach as opposed to controlling approach, more effectively facilitate intrinsic motivation such as curiosity and desire for challenges (e.g., Deci, Nezlek, &

Sheinman, 1981; Flink, Boggiano, & Barrett, 1990; Ryan & Grolnick, 1986). A third factor, supported by attachment theorists (e.g., Bowlby, 1979), relatedness, is fulfilled with the evidence of perceived relevance and a sense of security that satisfies our psychological needs. In Ryan and Grolnick's (1986) study, students exhibited lower intrinsic motivation when they perceive their teacher as cold and uncaring (Ryan & Deci, 2000b). Although isolation is not the key indicator that diminishes intrinsic motivation, security and support are found to play an essential role when evaluating the intrinsically motivated behaviors (Ryan & Deci, 2000b).

The elements of competence, autonomy and relatedness only apply to intrinsic motivation within activities that hold the appeal of "novelty, challenge and aesthetic value" (Ryan & Deci, 2000, p. 60). However, individuals may not be intrinsically motivated by a vast majority of the tasks they participate in. Accordingly, the dynamic of extrinsic motivation therefore become essential to be further analyzed.

Extrinsic motivation

There is no doubt that intrinsic motivation positively influences experience, performance, and psychological needs. However, most of the tasks people engage in are not intrinsically interesting. Especially after childhood, increasing social demands and responsibilities continue to weaken our intrinsic incentives to engage in activities (Ryan & Deci, 2000a). Nonintrinsically motivated behaviors were therefore studied to examine the way motivation is acquired and carried out that affect behavioral quality, persistence, and well-being (Ryan & Deci, 2000b). The process in which individuals act on an advocated behavior involves a certain degree of assimilating value and regulation to the self. This regulatory process that entails personal endorsement and choice was later considered

extrinsic motivation. The term extrinsic motivation is defined as a construct of engaging in an activity for a separable outcome other than the inherent enjoyment from the task (Ryan & Deci, 2000b). The level of integration and internalization can range from amotivation, unwillingness, passive compliance, to active personal commitment (Ryan & Deci, 2000a).

In contrast to some perspectives that consider the notion of autonomy to be solely associated with intrinsic motivation, recent work rooted in SDT proposes the varying degree of relative autonomous within extrinsic motivation which allows the internalization and integration of values and behavioral regulations (Deci & Ryan, 1985). For example, a husband and father is trying to quit smoking only to avoid blaming and complaints from his wife is extrinsically motivated because of a separable outcome of avoiding sanction. Instead, if he engages in the behavior for the reason that he is concerned about the health of his child, he is also extrinsically motivated but involves certain acknowledgement of the value and self-determination than the former. Although both involve instrumentality, the latter demonstrates greater volition and a sense of self-endorsed personal choice, whereas the former merely displays a passive response to external control. Such explanations imply evidence that both internalization and integration are included in extrinsic motivation, although that vary in their relative autonomy.

The subtheory of SDT, Organismic Integration Theory (OIT) therefore offers a detailed taxonomy and context of varied forms of extrinsic motivation based on the level of autonomy. As opposed to the initial view of extrinsic motivation being antagonistic to intrinsic motivation, thwarting self-determination and commitment, studies later have found extrinsic motivation did not always undermine intrinsic motivation-actually improved it (Koestner, Ryan, Bernieri, & Holt, 1984; Luyten & Lens, 1981). In this refined approach, a key concept of perceived locus of causality (PLOC) is introduced which

measures the felt autonomy for the behavior, or the extent to which an individual perceives their actions ranging from internal to external causes (Turban, Tan, Brown & Sheldon, 2007).

Figure 1 describes a self-determination continuum where self-regulation, relative autonomy and perceived locus of causality correspond with the motivation types. As the chart in Figure 1 illustrates, the far left is amotivation, a state where no motivation or intention is facilitated to act. This may result from lacking perceived competence, value of the task, or the belief that the behavior would lead to desirable outcome (Ryan & Deci, 2000a). Amotivation was treated as a unitary concept by early theorists as opposed to motivation (Ryan & Deci, 2000a). However, the purpose of PLOC is to make further distinctions among levels of autonomy. Extrinsic motivation includes four subcategories. At the very left of extrinsic motivation is external regulation, which refers to engaging in behavior primarily due to externally imposed rewards or punishments with the experience of external perceived locus of causality (EPLOC; deCharms, 1968). The introjection regulation describes the motivation of behavior that emanates partly, but not fully, from one's self, which is also treated as EPLOC (Ryan & Deci, 2000a). A typical type of introjection involves acting upon a behavior to enhance ego and self-esteem and avoid guilt or anxiety that attains a feeling of worth (Ryan & Deci, 2000a). A less passive form of extrinsic motivation is identification. Instead of solely seeking approval by others, one may consciously value an activity or endorse its goals as somewhat personally relevant. For example, an advertising student memorizing media formulas identifies the relevance to his/her performance in class. Taken from the same example, if the student learning the formulas does so because of the belief that it will be beneficial to his/her future career in the industry, he/she is engaging in the integration regulation. Integration is regarded as the

most autonomous form among extrinsic motivation (Ryan & Deci, 2000a). It occurs when the external reasons for an action is fully assimilated to the self that become congruent to one's value and needs (Ryan & Deci, 2000a). Although integration regulation has an internal perceived locus of causality, it is still not considered intrinsic motivation as it holds presumed instrumental value where actions are done to attain a separable outcome from the enjoyment of the task (Ryan & Deci, 2000b).

Behavior	Non-self-determined	Limited		Moderate		Self-determined
Type of motivation	Amotivation	Extrinsic motivation				Intrinsic motivation
Types of regulation	Non-regulation	External regulation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic regulation
Relative autonomy		<div><div>←</div><div>Low</div><div>Moderate</div><div>High</div><div>→</div></div>				
Perceived locus of causality	Impersonal	External	Somewhat external	Somewhat internal	Internal	Internal

Figure 1. Self-determination continuum

Despite some impoverished forms, SDT proposes that some types of extrinsic motivation representing active, agentic states that reflects certain inner acceptance of the value and utility of the task should not be depreciated (Ryan & Deci, 2000a). It is notable that internalization of extrinsic regulation does not mean that it transforms into intrinsic motivation (Ryan & Deci, 2000a). Rather, it suggests the potential for one to engage in internalization and integration process that increases relative autonomy with an internal perceived locus of causality.

Message Framing: Regulatory Focus Theory

Message framing refers to presenting one of two equivalent value outcomes either positively in terms of potential gains (positive framing) or negatively in loss terms (negative framing) (Perreault & Cannon, 2010). Message framing is defined as “equivalent description of a decision problem can lead to systematically different decisions” according to Sher and McKenzie (2010). There are at least three operational definitions of message framing categories. Levin, Schneider and Gaeth’s (1998) described the taxonomy of framing effects: attribute framing, risky choice framing, and goal framing (as cited in Sher & McKenzie, 2010). Attribution framing is whether a single object is framed with a positively valenced portion or equivalent negatively valenced portion that influence audience evaluation (Sher & McKenzie, 2010). Risky choice framing refers to the situation under which audience is provided with two options in forced choice tasks. When an uncertain outcome indicates a potential gain, people tend to be risk-averse whereas the uncertainty highlights the possibility of a potential loss, people are more likely to become risk-seeking (Cesario, Corker, & Jelinek, 2013). In goal framing, subjects are encouraged to adopt a recommended behavior involving a description of advantage of participating in the activity or the equivalent statement of the disadvantage not taking the action (Sher & McKenzie, 2010). Therefore, although both considered goal framing, intrinsic versus extrinsic concerns goal content whereas gain versus loss concerns goal outcome. To distinguish the two variables in this thesis, self-determination is referred to goal framing and regulatory focus is regarded as message framing.

There has been a considerable amount of research studying message frames in the context of health communication (Rothman, Salovey, Antone, Keough, & Martin, 1993; Tykocinski, Higgins, & Chaiken, 1994). For example, prospect theory attempted to predict

message framing effectiveness with the outcome of certainty versus uncertainty (i.e., risky) to perform a behavior (Rothman & Salovey, 1997). Rothman et al. (1997) argued that gain frames are more effective under the condition of low perceived risk (e.g., health-affirming behaviors) and loss frames are considered more effective under the condition of high perceived risks (e.g., illness-detection behaviors). However, a recent meta-analysis has shown that a gain-frame is rather unreliable in predicting health-affirming behaviors, whereas a loss-frame performed better in illness-detection behaviors (Cesario et al., 2013). Such contradiction may have resulted from the discrepancy of the researchers' intention behind the message design and the participants' interpretation of a recommended behavior.

More recent research has shifted the focus to identifying individual responsiveness to message frames (e.g., Cho & Boster, 2008; Latimer et al., 2008; Rothman, Wlaschin, Bartels, Latimer, & Salovey, 2008; Uskul, Sherman, & Fitzgibbon, 2009). Regulatory Focus Theory (RFT; Higgins, 1997, 2006) has been applied in the context of message framing and understanding consumer behavior in diverse contexts such as marketing, psychology, sociology and organizational behavior (Motyka et al., 2013). Regulatory Focus Theory argues that people are motivated by one of two routes: promotion-focus or when one minimizes discrepancies between actual and desired end states (i.e., seek pleasure) and prevention-focus or when one maximizes the discrepancy between actual and undesired end states (i.e., avoid pain) (Meyer, Becker, & Vandeberghe, 2004). End states can be defined as ideals (what one wants to be) and oughts (what others think one should be) (Higgins, 1997). RFT posits that people with a promotion-focus emphasize the presence and absence of positive outcomes that emphasize on goals and achievements (Higgins, 1997). These individuals use an approach strategy for goal attainment that seeks to minimize the discrepancy with their ideal self and display greater eagerness in working

towards a gain than guarding against a non-gain (Idson, Liberman, & Higgins, 2000). On the contrary, people with a prevention-focus emphasize protection and safety, as well as the presence or absence of negative outcomes. Individuals with a prevention-focus tend to use avoidance strategy to achieve goals by minimizing the discrepancy with their ought self. Lee and Aaker (2004) suggested that prevention-focused people display greater vigilance in preventing a loss than working toward a non-loss.

Although originally examined and viewed as a chronic individual trait, research in the past decade has shown that one's regulatory focus can be primed. Therefore, by priming one of the focuses, it is possible to deliver a persuasive message with a frame that fits with an individual or other message elements (Cesario, Higgins, & Scholer, 2008). Regulatory goals can be primed by asking promotion-focused people how their goals and hopes have changed overtime, and asking prevention-focused people how their obligations and responsibilities have changed over time (Higgins, Roney, Crowe, & Hymes, 1994). It also be induced by momentary situations, such as task instructions or message frames (Crowe & Higgins, 1997; Idson, Liberman, & Higgins, 2000; Roney, Higgins, & Shah, 1995). Further, several studies have shown that regulatory-focus can be primed through messages in persuasion (Lee & Aaker, 2004; Cesario, Grant, & Higgins, 2004; Spiegel, Grant-Pillow, & Higgins, 2004; Jeong & Yoon, 2014). One consistent finding in this research stream is that individuals with a promotion-focus respond more favorably to a gain framed message, whereas loss framed messages are more effective to the prevention-focused individuals (Avnet & Higgins, 2006; Kees, Burton, & Tangari, 2010; Cesario et al., 2013). Lee & Aaker (2004) have found that gain frames are more persuasive when the appeal is both promotion-focused and when perceived risk is low; loss frames are more persuasive when the appeal is prevention-focused and when perceived risk is high.

A closer look to the literature offers some insight to understand the components and functioning behind RFT that describes the different ways a message can be framed and what (Scholer & Higgins, 2008), and predicts which and for whom each message framing strategy is the most effective (Higgins, 1997). Cesario and colleagues (2013) summarized several framing levels of RFT. First, with a similar goal of achieving desired end-states and avoiding undesired end-states, *hedonic consequences* distinguish individual motivation in which promotion-focused people are more motivated by pleasure and prevention-focused people are more motivated by pain (Idson, Liberman, & Higgins, 2000, 2004). According to Idson, Liberman and Higgins (2000), there is an asymmetry in hedonic consequence because the pleasure derived from a gain is more intense than a non-loss, while the pain of a loss is more intense than non-gain. The framing of messages in this work is centered around the domain of hedonic consequence where pleasure of adherence (e.g., health and beauty) and pain of non-adherence are underlined (e.g., unhealthy, fine lines and wrinkles). Second, *outcome sensitivities* describe how pleasure and pain are defined for people with different regulatory focuses. Specifically, four types of outcome are described in the messages: gain (pleasure) and non-gain (pain) versus loss (pain) and non-loss (pleasure). Accordingly, messages emphasizing gain/non-gain including achieving or missing out on a good outcome (e.g., obtain youthful skin versus missing out obtaining youthful skin) are more effective to promotion-focused people. On the contrary, messages centered around loss/non-loss such as experiencing or avoid a bad outcome (e.g., develop wrinkles versus avoid developing wrinkles) are more sensitive to prevention focused people (Cesario et al., 2013). Third, *regulatory concerns* suggest that people in a promotion-focus are concerned with growth and nurturance needs whereas people with a prevention-focus are more concerned with security needs (Cesario et al., 2013). For

instance, the outcome of sun exposure can be described as a safety concern of skin cancer or a growth and nurturance concern of age spots and wrinkles (Cesario et al., 2013). Accordingly, framing encourages minimizing the discrepancy with an ideal self versus ought self. Finally, different *goal-pursuit strategies* are preferred and used for pursuing recommended behaviors for people in different focuses such as eagerness approach versus vigilance avoidance (Cesario et al., 2013).

Combining the view of perceived message outcome and individual inclination, a message framing goal may be distinguished not only by the desirability of the end state, but also in terms of the strategies being adopted to achieve them (Higgins, 1997). Goal compatibility situations can influence information processing in which individuals should expend less effort to process an appeal that is compatible with their goal resulting in a favorable persuasion effect (Petty & Cacioppo, 1979). Lee and Aaker (2004) demonstrated this compatibility effect of *regulatory fit*, which refers to a match between a message frame and one's chronic regulatory-focus. According to Lee and Higgins (2008), regulatory fit is mediated by the subjective experience of processing fluency which refers to the ease with which information is processed. Waenke, Bohner and Jurkowitsch (1997) found that the message is easier to process when it fits the way participants naturally think of the issue involving positive or negative outcomes. Therefore, the regulatory goal emphasized in a message affects how easy it is to process the information, depending on whether the content of the message is compatible or conflicts with the individual's regulatory goal (Lee & Aaker, 2004). An approach goal aiming a desirable outcome is more compatible with promotion-focus (compared to prevention focus) and an avoidance goal of striving to steer away from an undesirable outcome is more compatible with prevention focus (compared to a promotion-focus) (Lee & Aaker, 2004). For example, an advertisement promoting

sunscreen use that highlights obtaining younger-looking skin should be more effective for those with a promotion-focus, and an ad that emphasizes potentially losing skin youthfulness is more effective with a prevention focus. The higher fit occurs when more eagerness is activated in approaching a gain than guarding against a non-gain; more vigilance is induced in avoiding a loss than pursuing a non-loss. Hence, the level of “fit” has practical implications in persuasion strategy.

Regulatory framework outlines different ways that a message can be framed where it implies a motivational hierarchy (Cesario et al., 2013). From the motivational standpoint, seeking an interactive effect between approach/avoidance orientation (i.e., promotion and prevention) and inward/outward orientation (i.e., intrinsic and extrinsic) of an individual can serve as a predictive tool that determines a favorable message framing strategy.

Although Vansteenkiste’s research (2004) has shown that intrinsic goal framing yields more positive outcomes than extrinsic motivation in educational settings, a recent study identified a boundary condition to these effects (Lee 2016). In particular, this study examined how an intrinsic goal frame (e.g., health benefits) and an extrinsic goal frame (e.g., physical attractiveness) interact with self-construal to influence attitudes and behavioral intention (Lee 2016). This work identified that there are instances where intrinsic goal framing does not result in favorable effects - when one has an interdependent self-construal.

The current work seeks to extend this work by examining how intrinsic and extrinsic goal framing function in persuasion in relation to regulatory message framing. This work asserts that there is a match between intrinsic (extrinsic) goal framing and prevention-focus (promotion-focus) regulatory focus message frame. Specifically, an intrinsic goal stems from individual’s innate needs such as health and self-development

that deter negative outcomes that are intrinsically important to the self (Deci & Ryan, 2000a). PSAs that focus on advocating behaviors to prevent health risks (e.g., skin cancer) meet an individual's safety and security concerns of avoiding potential loss (Cesario et al., 2013). This aligns with a prevention-focus. In contrast, an extrinsic goal is focused more about the external manifestation of self-worth such as contingent approval and external indicators such as physical appearance or financial success (Kasser & Ryan, 1993, 1996). Thus, it fulfills one's growth and nurturance concerns which fits individual with a promotion-focus (Cesario et al., 2013). Further, according to Higgins (2000), an approach goal that strives towards a desirable end state is more compatible with a promotion-focus, whereas an avoidance goal is more compatible with a prevention-focus that steers away from an undesirable end state. Therefore, it is expected that a match between an extrinsic goal frame and promotion-focus message frame and a match between an intrinsic goal frame and prevention-focus message frame should yield more positive outcome. Therefore, the hypotheses are proposed:

H1. Individuals exposed to an extrinsic (intrinsic) goal appeal will report a more favorable attitude toward the message when the relevant concerns are framed with a promotion (prevention) focus.

H2. Individuals exposed to an extrinsic (intrinsic) goal appeal will report higher behavioral intention to engage in the recommended behavior when the relevant consequences are framed with a promotion (prevention) focus.

Chapter 3: Method

Design, procedure and participants

To test the hypotheses, the study employs a 2 (goal framing: intrinsic versus. extrinsic) \times 2 (regulatory focus: promotion versus prevention) between-subjects experimental design. Four PSAs were used in the study and each one included an image, a headline, and brief text promoting sunscreen use (see Appendix). Goal framing in the context of sunscreen use is manipulated consistent with prior researches (Vansteenkiste, et al., 2004; Lee, 2016). For the intrinsic goal manipulation, the message contains information about healthy skin, whereas the extrinsic goal frame manipulation focuses on beautiful skin (Kasser & Ryan, 1993, 1996).

Regulatory focus is also manipulated through the ad copy (Aaker & Lee, 2001). To prime the promotion-focus, participants are presented an ad focusing on the benefit of using sunscreen stating “Promote healthy cancer-free skin by using sunscreen on a regular basis” or “Promote youthful and glowing skin by using sunscreen on a regular basis”. In contrast, to prime prevention-focus the ad copy focused on a negative outcome, with prevention-focus that stated “Prevent risk of developing skin cancer by using sunscreen on a regular basis” or “Prevent age spots and wrinkles by using sunscreen on a regular basis”.

An online-based experiment was conducted using a self-administered online survey. Participants were recruited from two classes at UT using Qualtrics. Qualtrics is a web-based survey tool to distribute, collect and evaluation data. It allows participant to record their responses through an anonymous link which can be posted onto a website without tracking or identifying information of respondents. Students agreed to participate voluntarily after acknowledging that they have the right to withdraw from the study at any time and their responses will be kept confidential. Once the survey was completed, they

would receive one extra credit for the course upon entering their name and EID if they wish. The advantages of Qualtrics is that the evaluation results can be downloaded in a usable electronic form efficiently which does not require additional calculations or reformatting of the responses (DeSantis, 2013). The sample consists of a total of 218 participants from Qualtrics. After removing incomplete and those who completed the survey in under three minutes, as well as patterned answer choices, 136 of valid responses between individuals ages 19-29 are included in the study (76% female, average age 21).

We expect that messages with the combination of extrinsic/promotion and intrinsic/prevention will exhibit greater persuasiveness. The results including interaction effect graphs will demonstrate the orientation and strength between goal frame and message frame variables.

Chapter 4: Results

Manipulation check findings. To assess the message frame manipulation a 2 (message frame: promotion-focused versus prevention-focused) \times 2 goal frame (intrinsic versus extrinsic) MANOVA confirmed a successful manipulation of message frame, Wilks's $\lambda = .824$, $F(2, 131) = 13.97$, $p < .001$. Specifically, participants in the promotion-focus message frame indicated the message focused on promotion ($M = 5.45$) more than those who were exposed to the prevention-focus message frame ($M = 5.05$); $F(1, 132) = 6.69$, $p < .05$. In contrast, participants in the prevention-focus message frame demonstrated the message focused more on prevention ($M = 4.80$) compared to those exposed to the promotion-focus message frame ($M = 3.89$), $F(1, 132) = 20.85$, $p < .001$. Therefore, the manipulation was successful.

To evaluate the success of goal frame manipulation the same analysis was conducted, but using the manipulation check items for intrinsic goal framing and extrinsic goal framing. The result showed a significant multivariate main effect of goal frame: Wilks's $\lambda = .85$, $F(2, 131) = 11.60$, $p < .001$. Participants in the intrinsic goal frame indicated the message focused more on the intrinsic goal of health ($M = 4.38$) compared to those who were exposed to the extrinsic goal frame, $M = 3.45$, $F(1, 132) = 17.26$, $p < .001$. In contrast, participants in the extrinsic goal frame indicated the message focused more on extrinsic goal of physical appearance ($M = 5.38$) compared to those exposed to the intrinsic goal frame, $M = 4.39$, $F(1, 132) = 17.20$, $p < .001$. In sum, goal frame manipulation was significant as well.

Test of hypothesis. Hypothesis 1 proposed that when individuals are exposed to an extrinsic (intrinsic) goal appeal will lead to a more favorable attitude toward the message when the relevant concerns are framed with a promotion (prevention) focus. To assess this

prediction, a 2 (message frame: promotion-focused versus prevention-focused) \times 2 goal frame (intrinsic versus extrinsic) ANOVA was conducted using attitude toward message as a dependent variable. Results showed that there is there is a significant two-way interaction between goal frame and message frame, $F(3, 132) = 3.21, p < .05$. More specifically, contrast effects reveal that participants who were exposed to the prevention-focus message frame indicated a significantly more favorable attitude towards message when paired with an intrinsic goal frame ($M = 4.57$) compared to extrinsic goal frame ($M = 3.81$); $F(1, 132) = 4.29, p < .05$, as indicated in Figure 2. In contrast, participants who were exposed to the promotion-focus message frame showed slightly higher attitude toward the message when paired with an extrinsic goal frame ($M = 4.06$) compared to when paired with an intrinsic goal frame ($M = 4.23$) though not statistically significant, $F(1, 132) = 2.74, p = 0.10$.

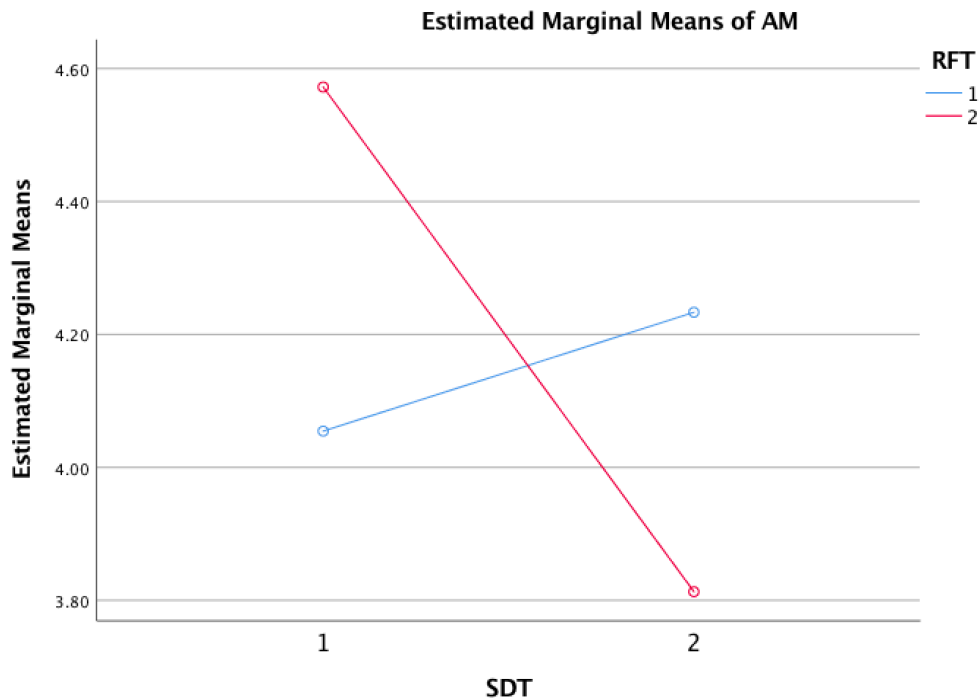


Figure 2. Interaction effects for attitude towards message

Similarly, hypothesis 2 proposed that individual exposed to an extrinsic (intrinsic) goal appeal is likely to have higher behavioral intention to engage in the recommended behavior when the relevant consequences are framed with a promotion (prevention) focus. To test this prediction, we conducted a 2 (message frame: promotion-focused versus prevention-focused) \times 2 goal frame (intrinsic versus extrinsic) ANOVA using behavioral intention as a dependent variable. Results indicated that there is there is also a significant two-way interaction between goal frame and message frame, $F(3, 132) = 3.40, p < .05$. More specifically, however, contrast effects reveal that participants who were exposed to the promotion-focus message frame indicated a significantly higher behavioral intention towards message when paired with an extrinsic goal frame ($M = 4.66$) compared to intrinsic

goal frame ($M = 3.86$); $F(1, 132) = 8.61, p < .05$, as illustrated in Figure 3. In contrast, participants who were exposed to the promotion-focus message frame showed slightly higher behavioral intention when paired with an extrinsic goal frame ($M = 4.57$) compared to when paired with an intrinsic goal frame ($M = 4.36$) though not statistically significant, $F(1, 132) = 0.55, p > .05$.

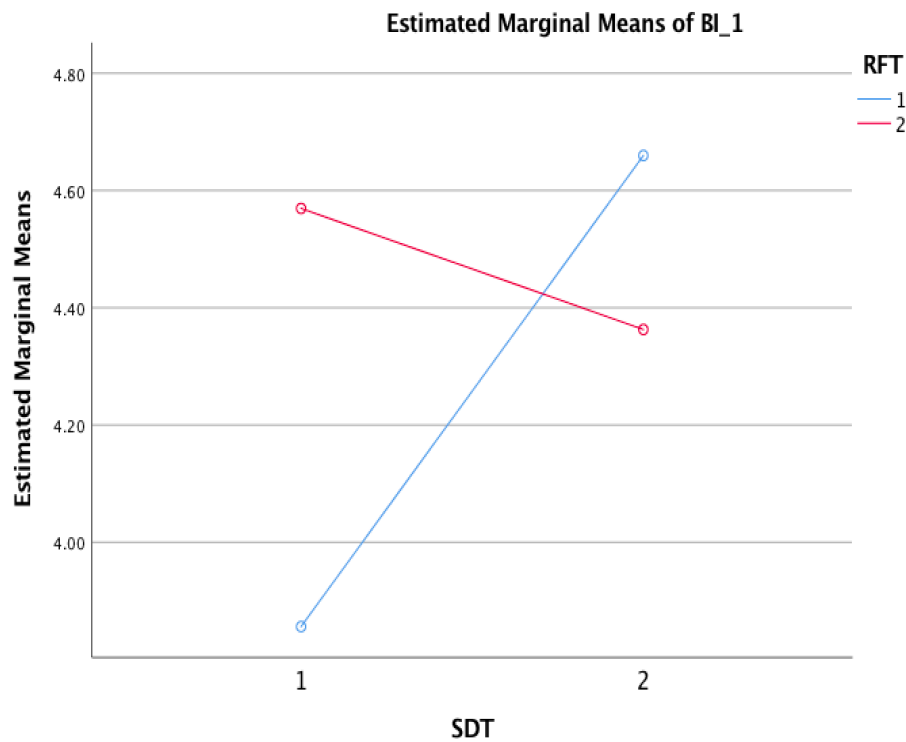


Figure 3. Interaction effects for behavioral intention

Chapter 5: General Discussion

This work investigated the interplay between goal frame and regulatory message frame in the context of advocating sunscreen use in PSAs. The findings demonstrate partial support for the posited interaction effect between goal frame and regulatory focus message frame. The results confirmed a significant interaction between goal frame and regulatory focus message frame for both attitude toward message and behavioral intention to engage in healthy behaviors. Specifically, for those exposed to an intrinsic (extrinsic) goal frame, it was predicted that they should report a more favorable attitude toward the message when the relevant concerns are framed with a prevention (promotion) focus. Similarly, for those exposed to an intrinsic (extrinsic) goal frame, it was hypothesized that behavioral intention is expected to be greater when the message is framed with a prevention (promotion) focus.

This pattern of results is generally supported, with significant interactions for both dependent variables. However, a closer examination of contrast effect reveals that for attitude toward the message, the match effect between an intrinsic goal frame and prevention-focus message frame drives the significant interaction, as the match effect between extrinsic goal frame and promotion-focus message frame is not significant. Interestingly, the opposite direction of findings was found for behavioral intention to engage in healthy behaviors. Specifically, contrast effects show that the match between the extrinsic goal frame and a promotion-focus message frame is driving the significant interplay between goal frame and regulatory-focus message frame on behavioral intention. Intrinsic goal frame and prevention-focus message frame, on the other hand, did not significantly facilitate behavioral intention. These findings reveal general support for the match effects, although a different match is driving the effect for each dependent variable.

Theoretically, this work contributes to the goal, motivation, and persuasion literature streams. Specifically, this work demonstrates the connection between goal frame and regulatory message frame that influences persuasion outcomes. The match between intrinsic goal frame and prevention-focus message frame reveals a more favorable attitude towards message while the pairing of extrinsic goal frame and promotion-focus message frame reveals a superior indication of behavioral intention. Yet, such pattern of finding is not found on the match between intrinsic goal frame and promotion-focus message frame or extrinsic goal frame and prevention-focus message frame. The combination of intrinsic goal frame and promotion-focus message frame and the match between extrinsic goal frame and prevention-focus message frame did not effectively increase attitude towards message nor behavioral intention. These results may be attributed to the regulatory fit where the intrinsic goal of striving for health by avoiding a potential loss fits better with prevention-focus frame than a promotion-focus frame. Similarly, the extrinsic goal of striving for beauty with a potential gain to enhance physical appearance suggesting a better fit with a promotion-focus frame. It also may be that the match between an extrinsic goal frame and a promotion-focus message is stronger in terms of facilitating behavioral intentions as opposed to a mere attitude toward the message.

In addition, this work extends prior research by examining motivational goal framing in persuasion with other message frames. The majority of work on goal content and goal framing has been conducted in educational settings, where it was originally proposed. As previous research endorses the value of intrinsic motivation, this work further investigates the extrinsic motivation especially in its internalized forms in which one experiences relatively high autonomy (Ryan & Deci, 2000a). This work provides evidence for using an extrinsic goal with external incentives to increase the persuasive power of the

message. Meanwhile, considering the hedonic consequences in RFT, this work sought to show the connection that an extrinsic goal frame and promotion-focus message frame both seem to be defined by pleasure, whereas the intrinsic goal frame and prevention-focus message frame tend to be driven by prevention of pain. Note that this effect only occurs when the content of an extrinsic goal is an approach goal while an intrinsic goal being an avoidance goal (Cesario et al., 2013).

The findings of the study also provide meaningful implications for advertising. It suggests that proper design of goal framing and regulatory focus framing in the message using appropriate terms and phrases can increase attitude towards message and behavioral intention in health contexts. Advertisers can apply an intrinsic goal frame with a prevention-focus message to induce more favorable outcome on attitude towards message as well as an extrinsic goal frame with a promotion-focus message frame to foster greater behavioral intention.

Chapter 6: Limitations

The limitations of the study should be noted. This work showed that the intrinsic-prevention pairing revealed more salience in attitude towards message. Within the same dependent variable, extrinsic goal frame showed a slightly higher persuasion effect when pairing with promotion-focus. Behavioral intention demonstrated the same direction where intrinsic-prevention revealed slightly higher persuasion effect yet did not replicated the finding with attitude towards message. Further research may improve the design of the ad copy as well as sample representation to validate this conclusion as current literature cannot seem to provide support to explain such result. Although prior researches have used student sample (e.g., Lee & Aaker, 2004; Vansteenkiste et al., 2004), the age range may be a factor in weighing personal relevance, or relatedness for intrinsic motivation (Ryan & Deci, 2000b). According to the comments received from the participants, the perception of the ad serving the academic setting in relation to a commercial setting in terms of production also has an impact on self-reported persuasiveness.

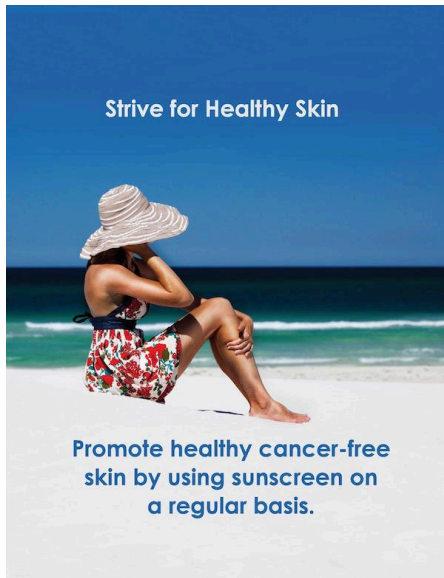
Meanwhile, the manipulation check for regulatory focus in this study can be improved. This manipulation included four items: “This ad focused on promoting healthy skin”; “This ad focused on promoting beautiful skin”; “This ad focused on preventing unhealthy skin” and “This ad focused on preventing skin damage (age spots)”. When creating the regulatory focus scale in SPSS, it was unclear whether to determine the measurement by means of two items or a single item objectively.

Lastly, previous research conducted by Rothman & Salovey (1997) and Lee & Aaker (2004) regarding message framing in health communication considered risk a moderator of the experiment in which they concluded that gain frame is more effective when perceived risk is low whereas loss frame is more effective when perceived risk is

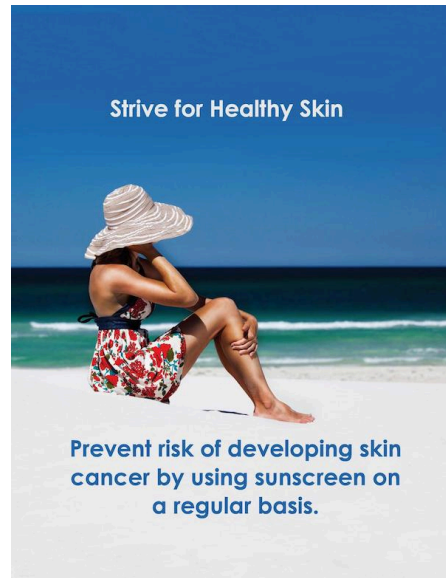
high. Due to limited time, this study is yet to examine other conditions such as promotion goal with high perceived risk and prevention goal under low perceived risk which would offer more rigor conclusion with additional evidence.

Appendix: Survey Stimuli

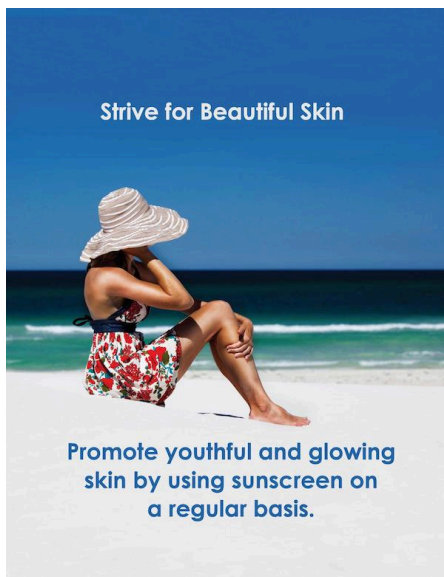
Intrinsic goal frame/promotion-focused message frame



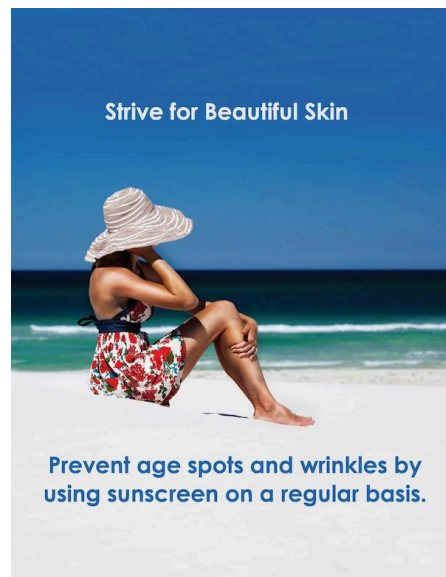
Intrinsic goal frame/prevention-focused message frame



Extrinsic goal frame/promotion-focused message frame



Extrinsic goal frame/prevention-focused message frame



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